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# Transmissible spongiform encephalopathies: TSE Conformers

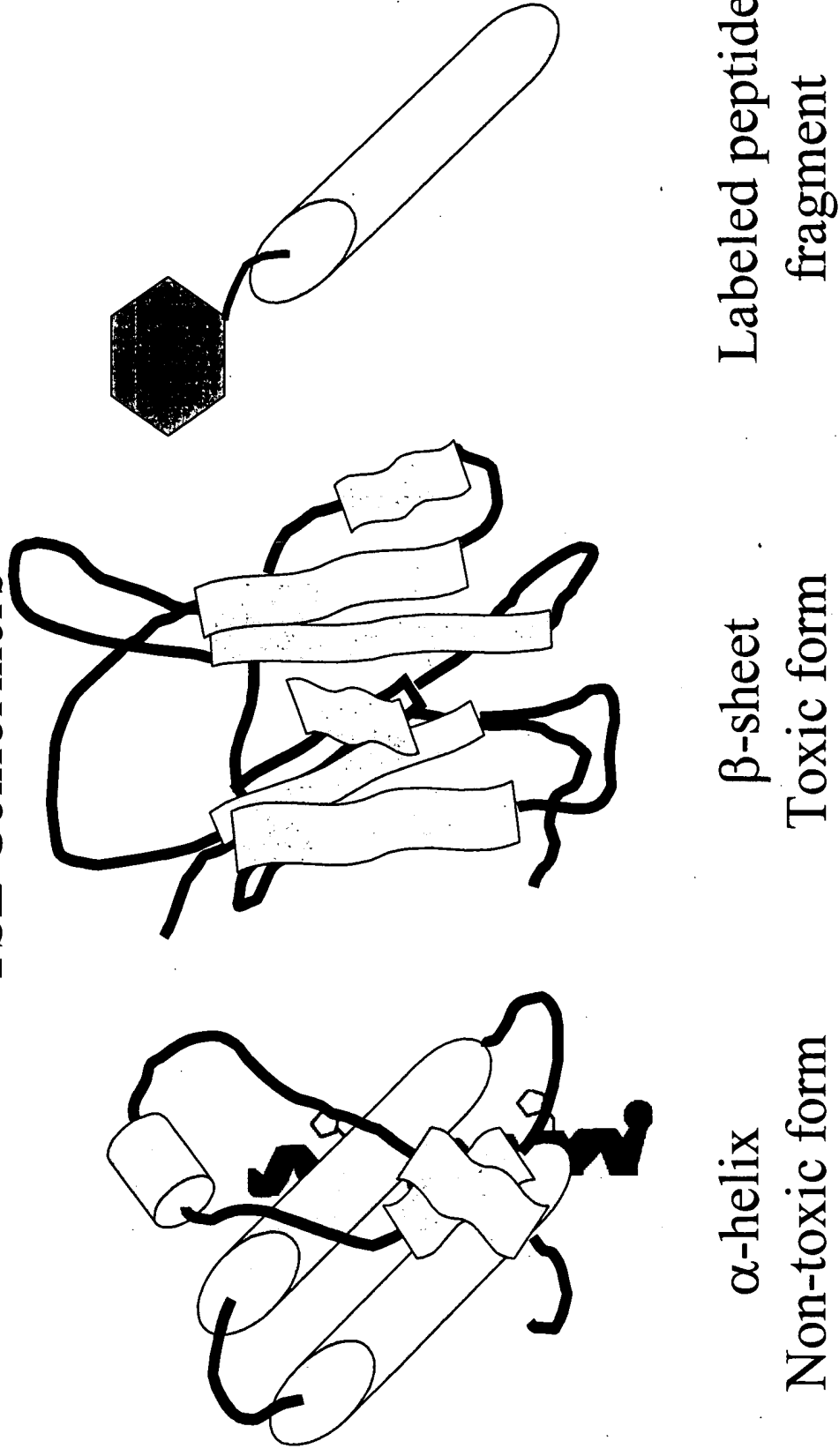


Figure 1

# TSE Detection Schema

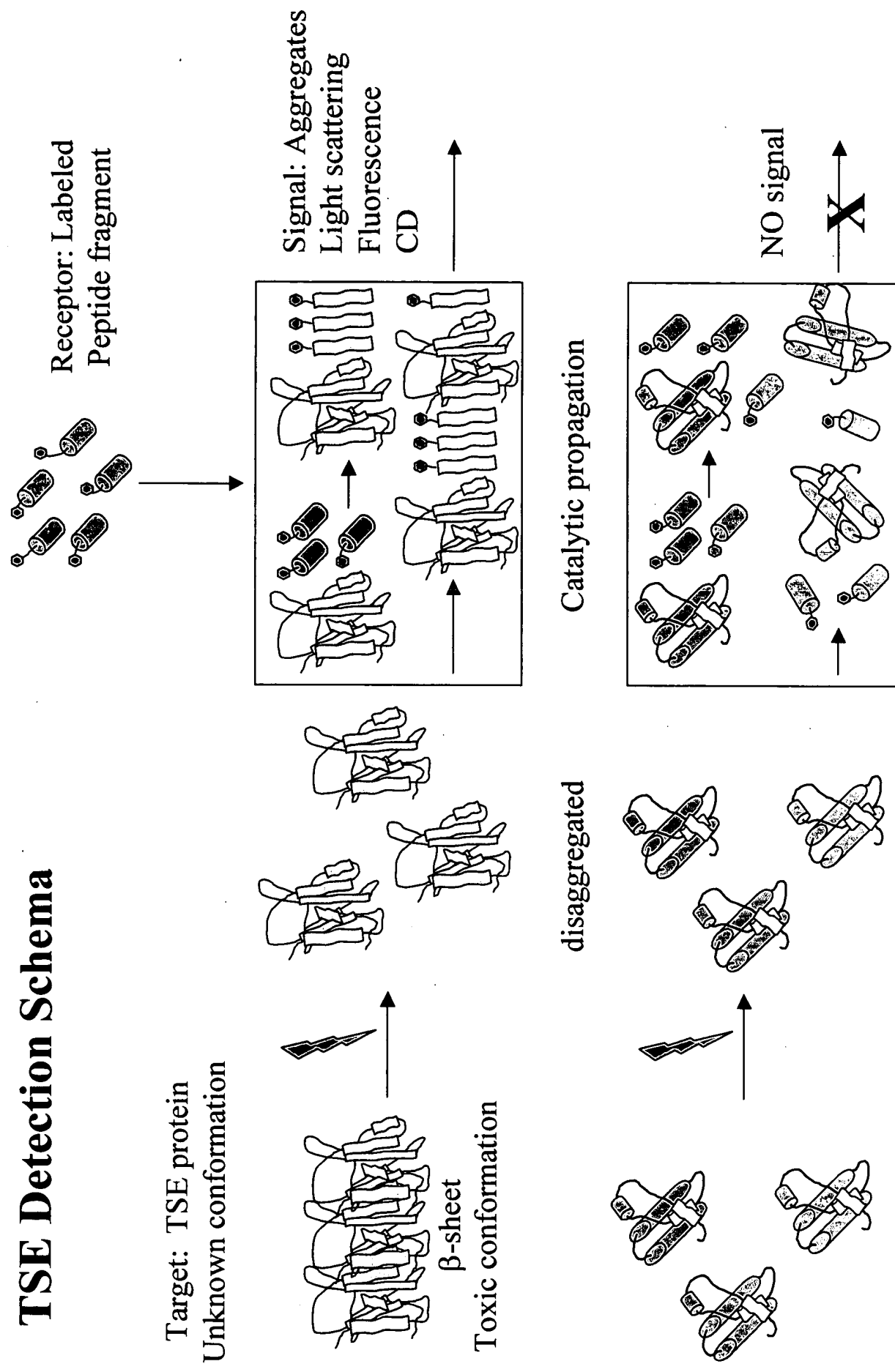


Figure 2

# Circular Dichroism Indicating Conformational Change

Poly-L-Lysine 20  $\mu$ M 52,000 MW

Initial test peptide system

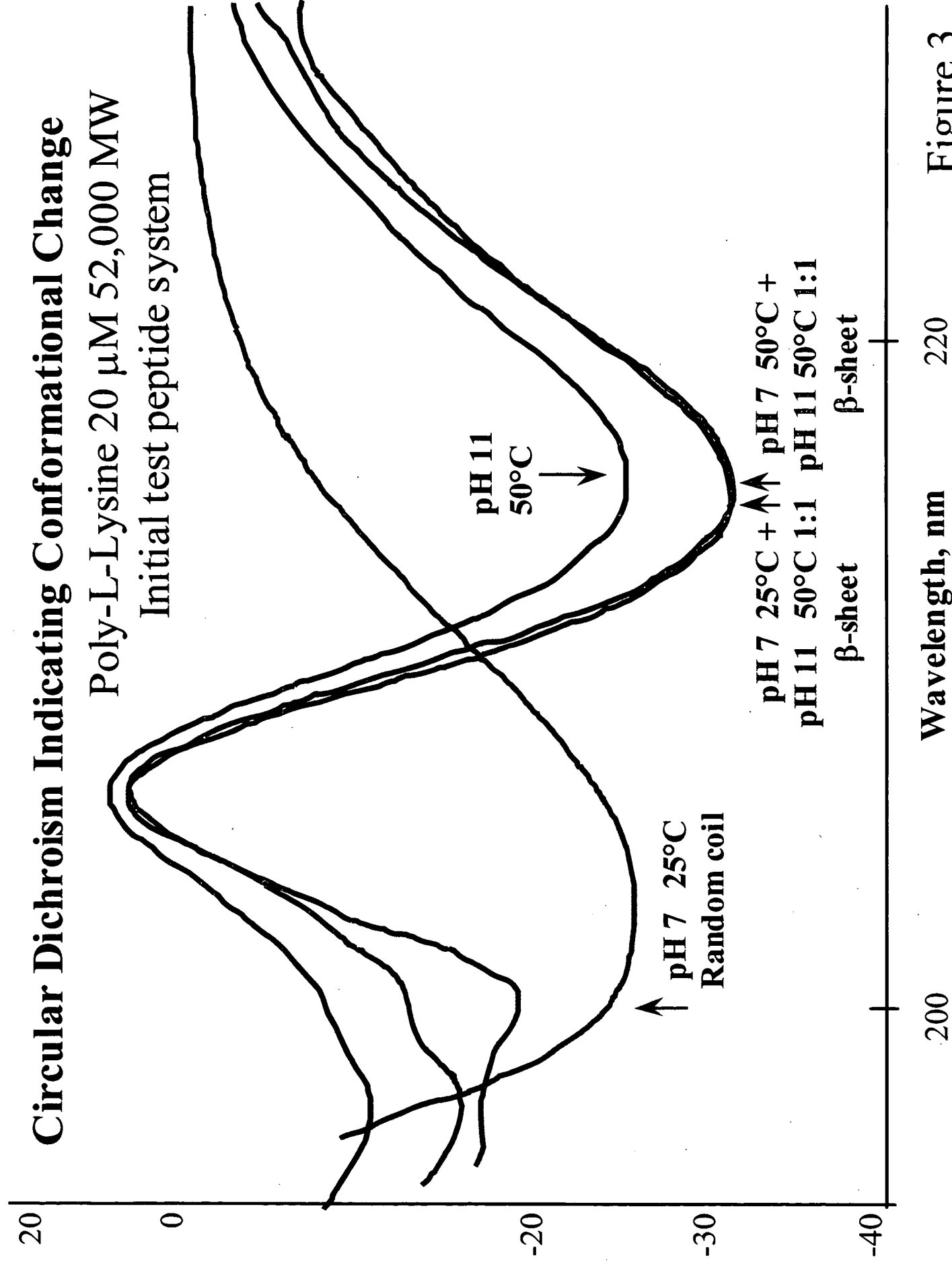


Figure 3

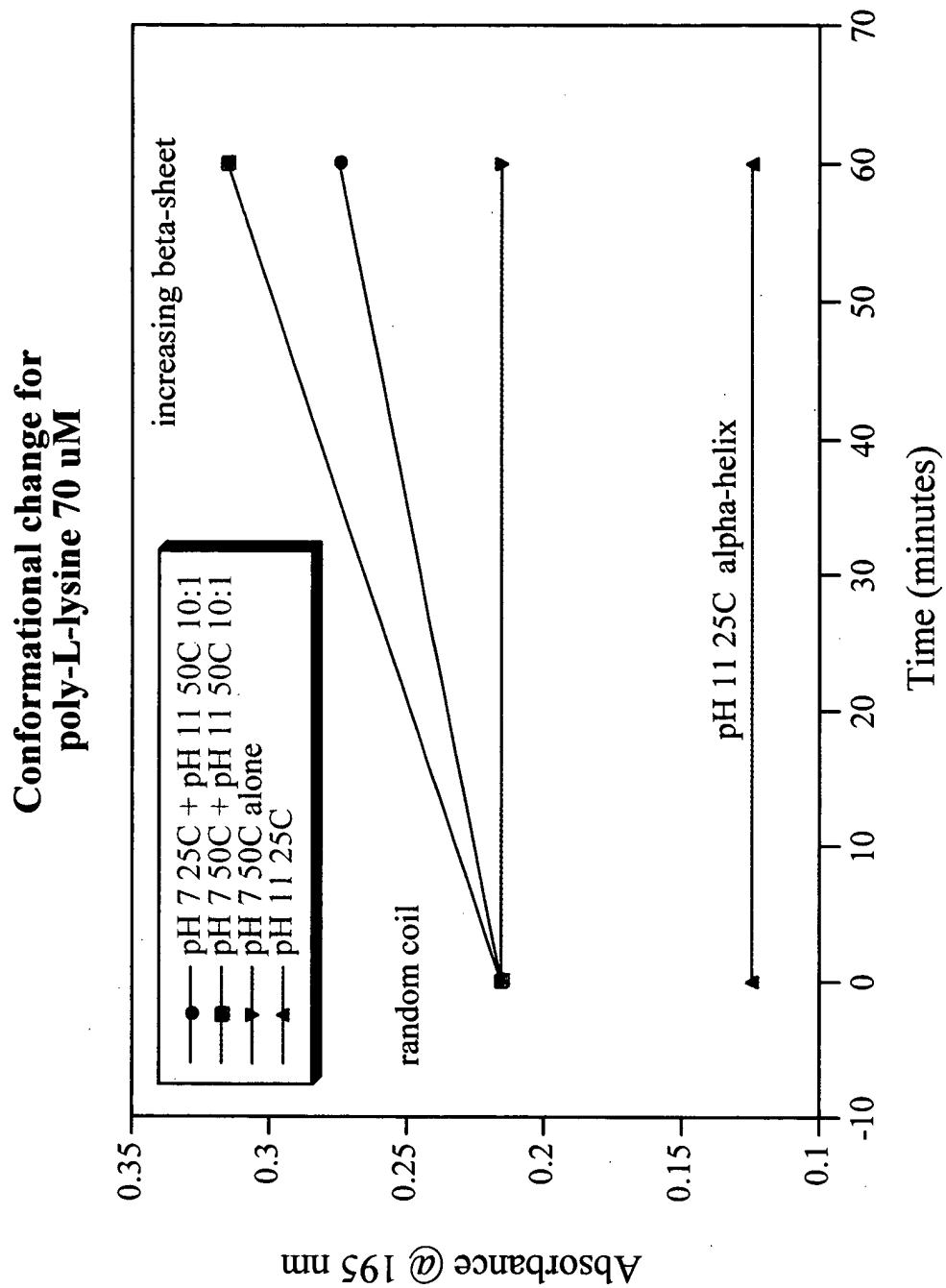


Figure 4

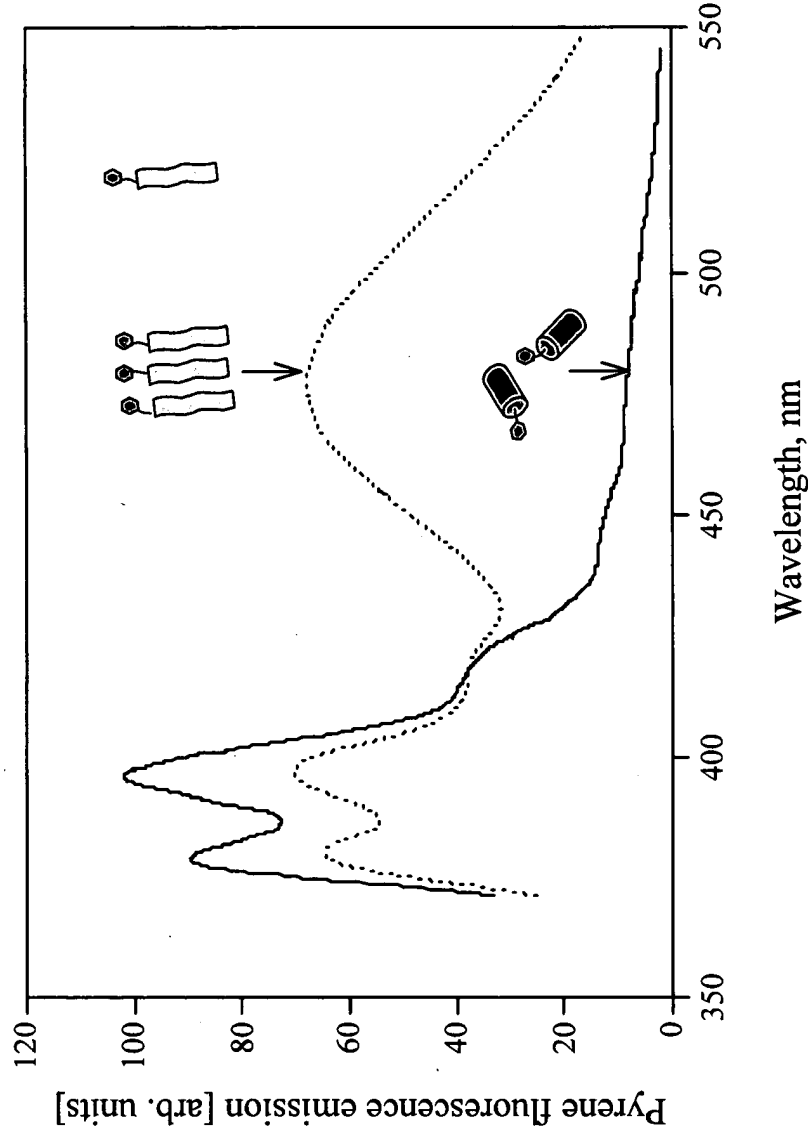
# Circular Dicroism (CD) of Poly-L-Lysine varying Temp and pH

Temperature °C	25°C	50°C
pH 7 alone	Random coil	Random coil
pH 11 alone	$\alpha$ -helix	$\beta$ -sheet
pH 7 + pH 11	$\beta$ -sheet	$\beta$ -sheet
pH 11 25°C + pH 11 50°C	Random coil	-----

Figure 5

## Experiments with fluorescent probes for detection.

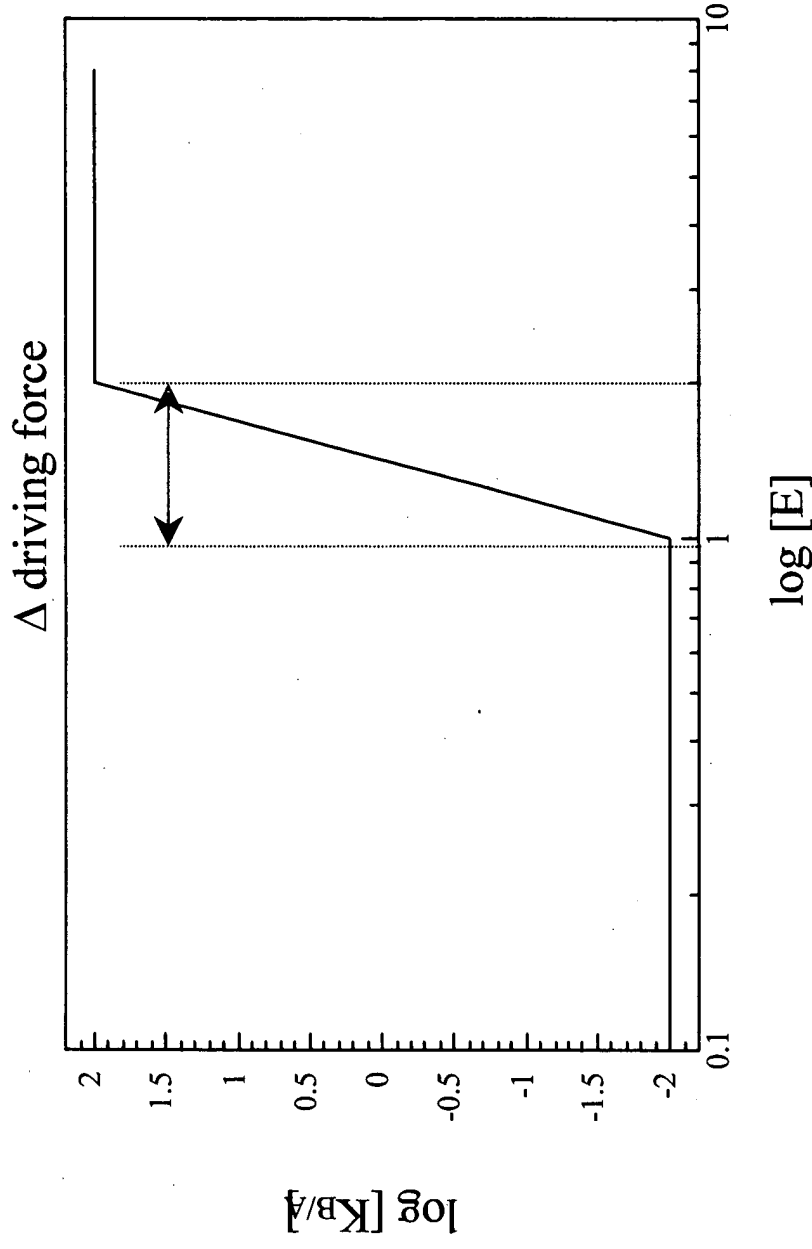
The data are from previous FRET experiments for proximal and distal locations in an  $\alpha$ -helical bundle structure undergoing **conformational change**.



The spectra shown are for pyrene excimer formation at 480 nm, but other probes (FITC, etc.) can be used.

Figure 6

# Engineering considerations for sensor design



The **driving force** must be commensurate with the **energetic difference** between the two conformational states

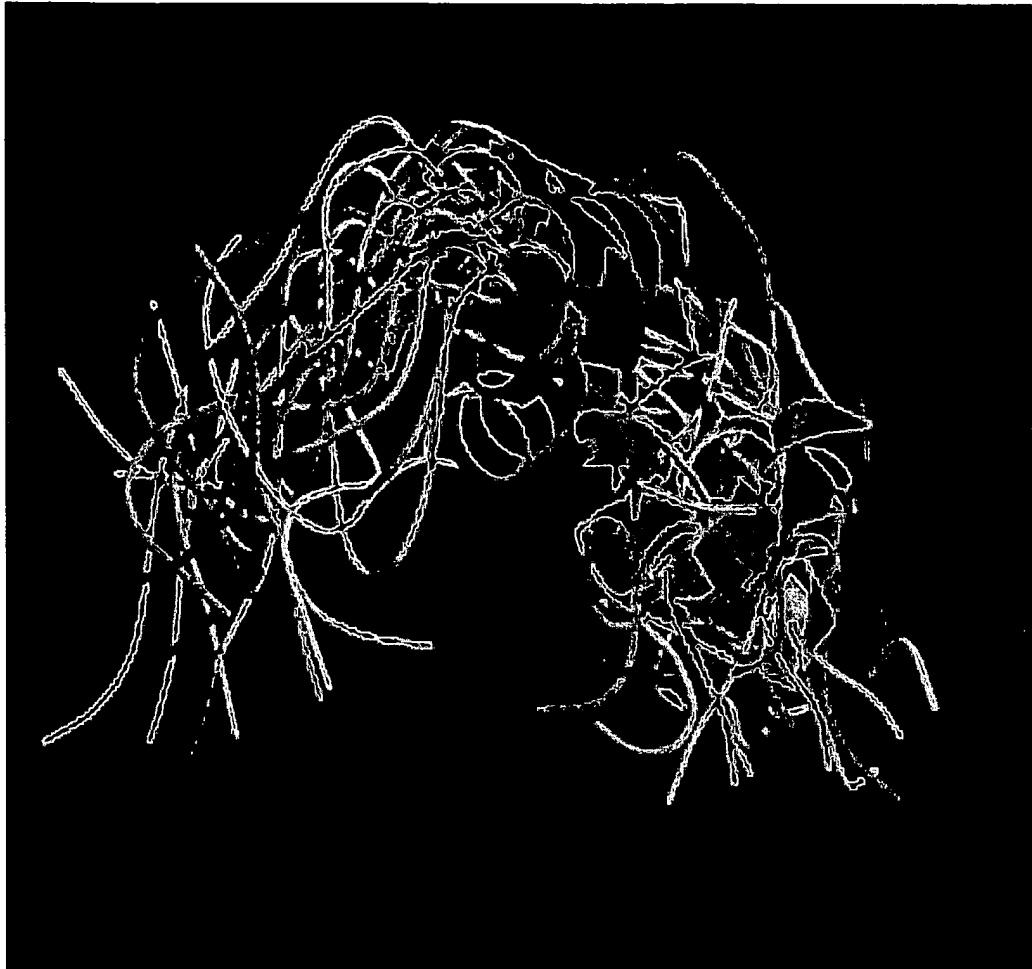
The process is driven by a **differential interaction** of the target peptide E, with the two conformations of the test PrP molecule.

Figure 7

**Figure 8**



**Figure 9**



**FIGURE 10**

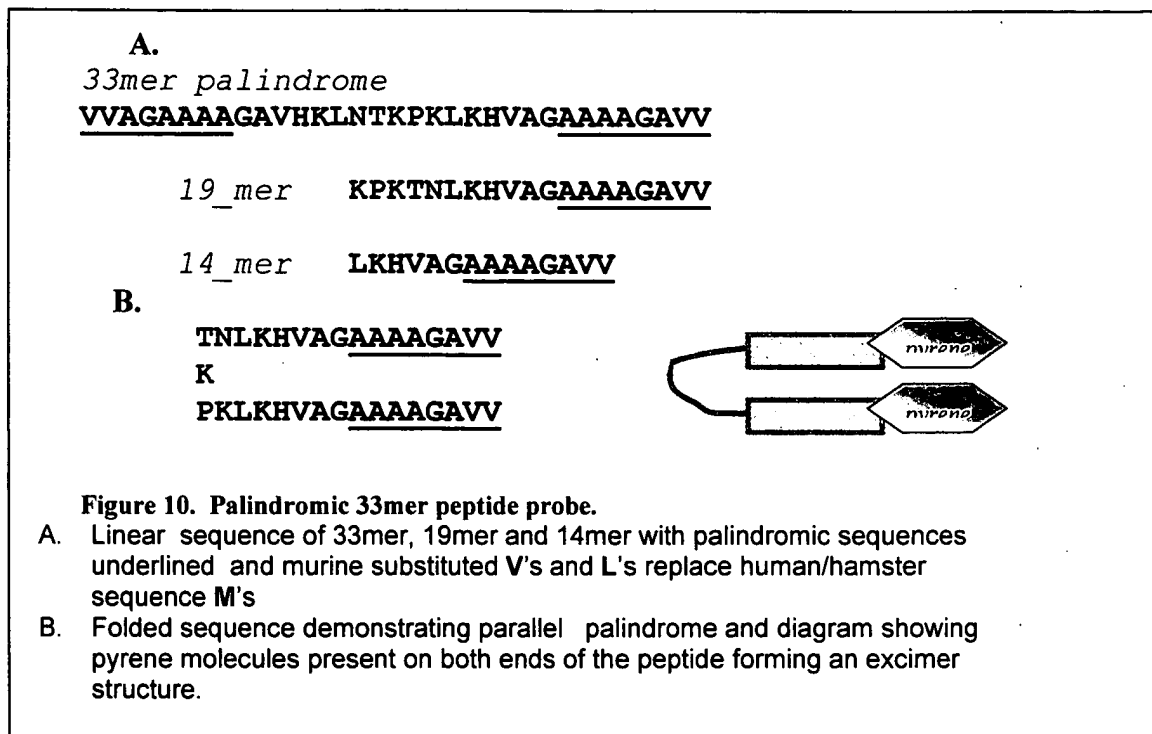


FIGURE 11

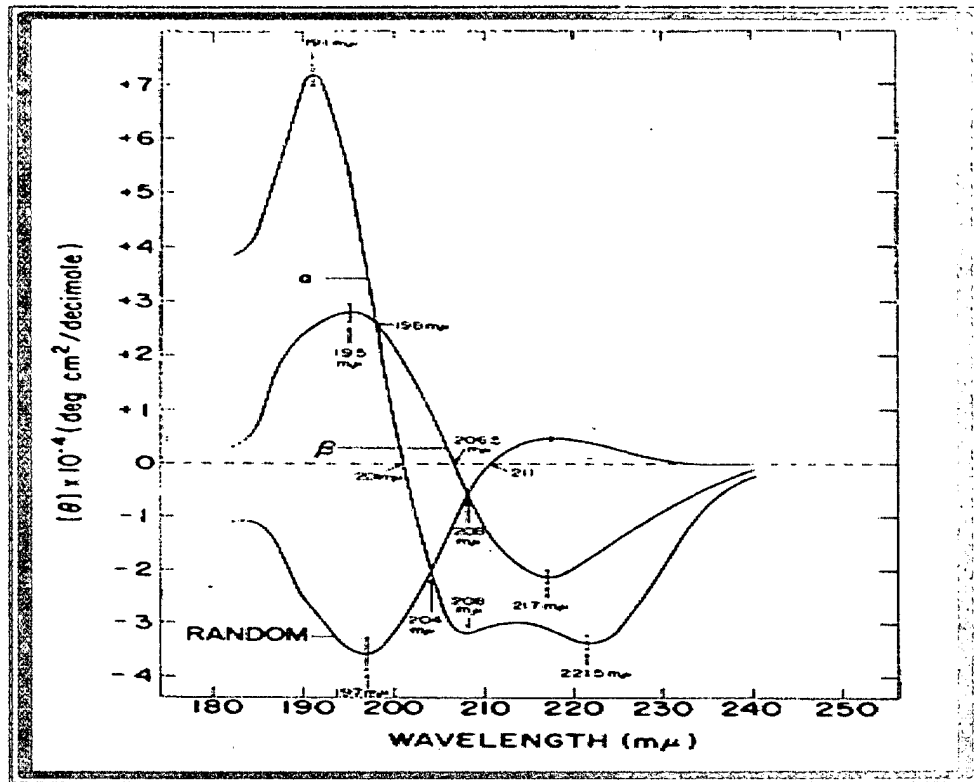


FIGURE 12

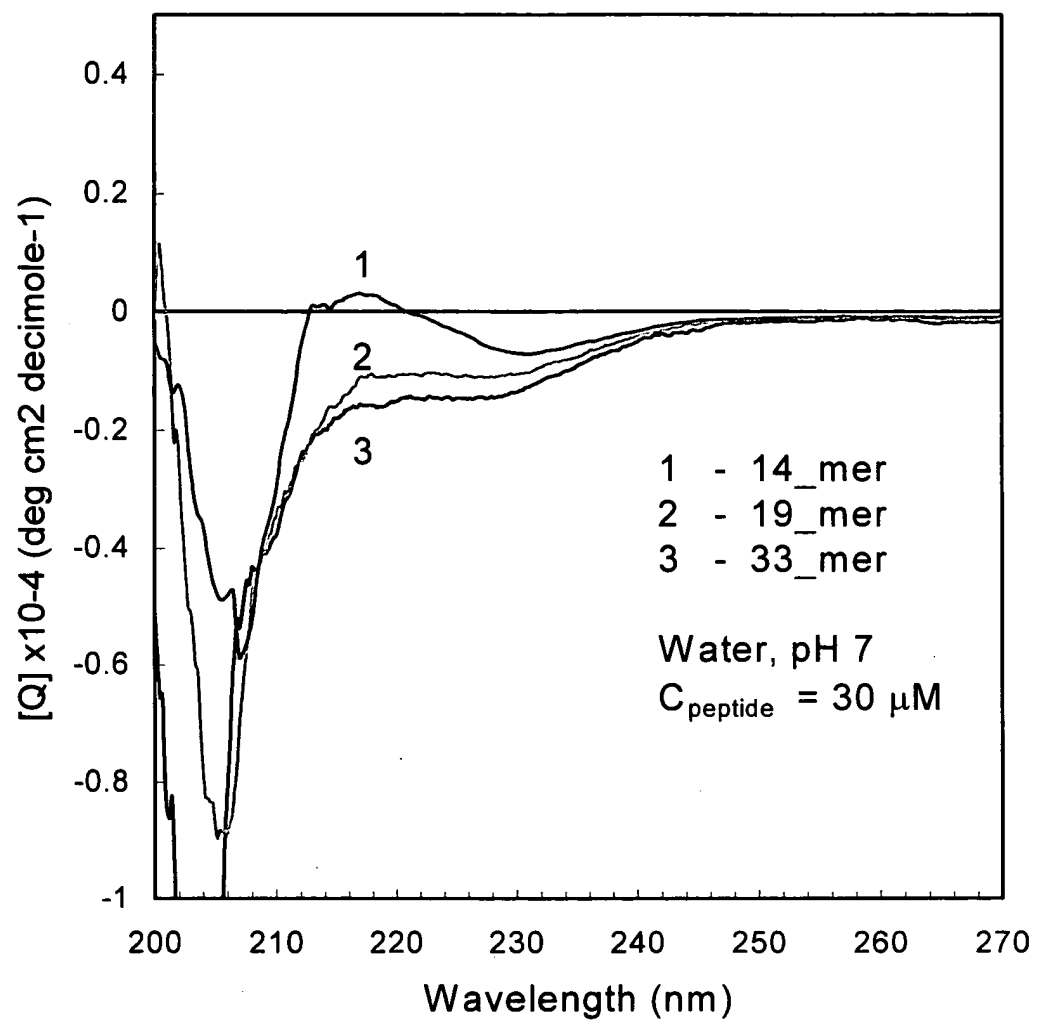
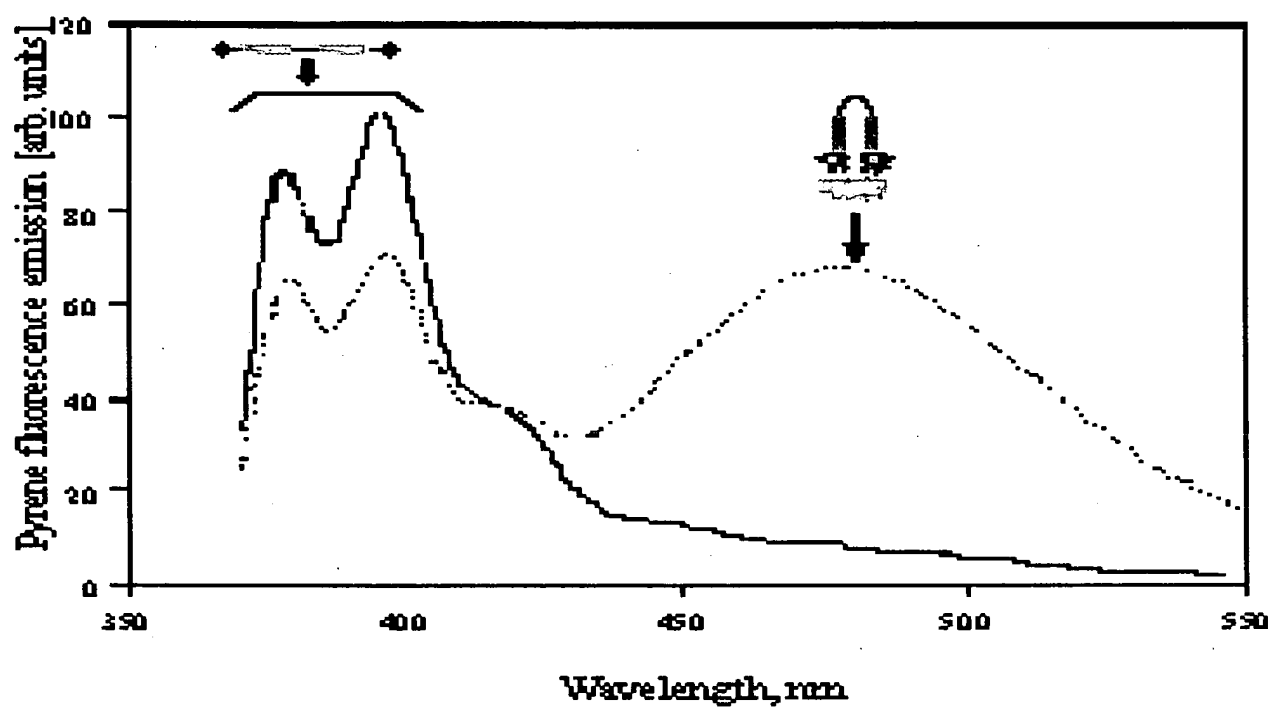


FIGURE 13



**FIGURE 14**

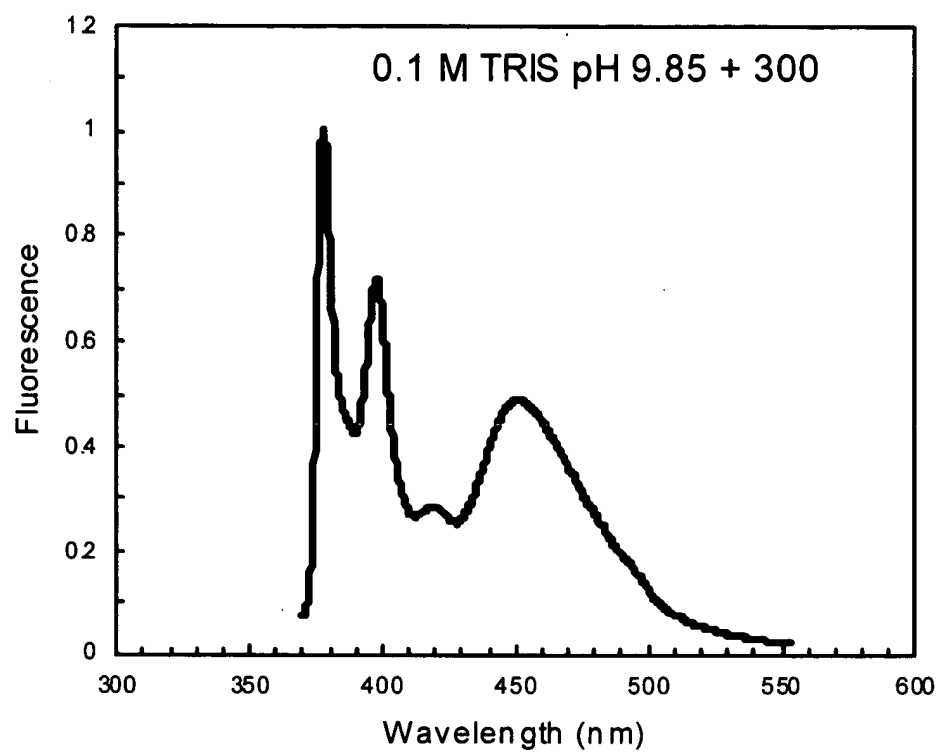


FIGURE 15

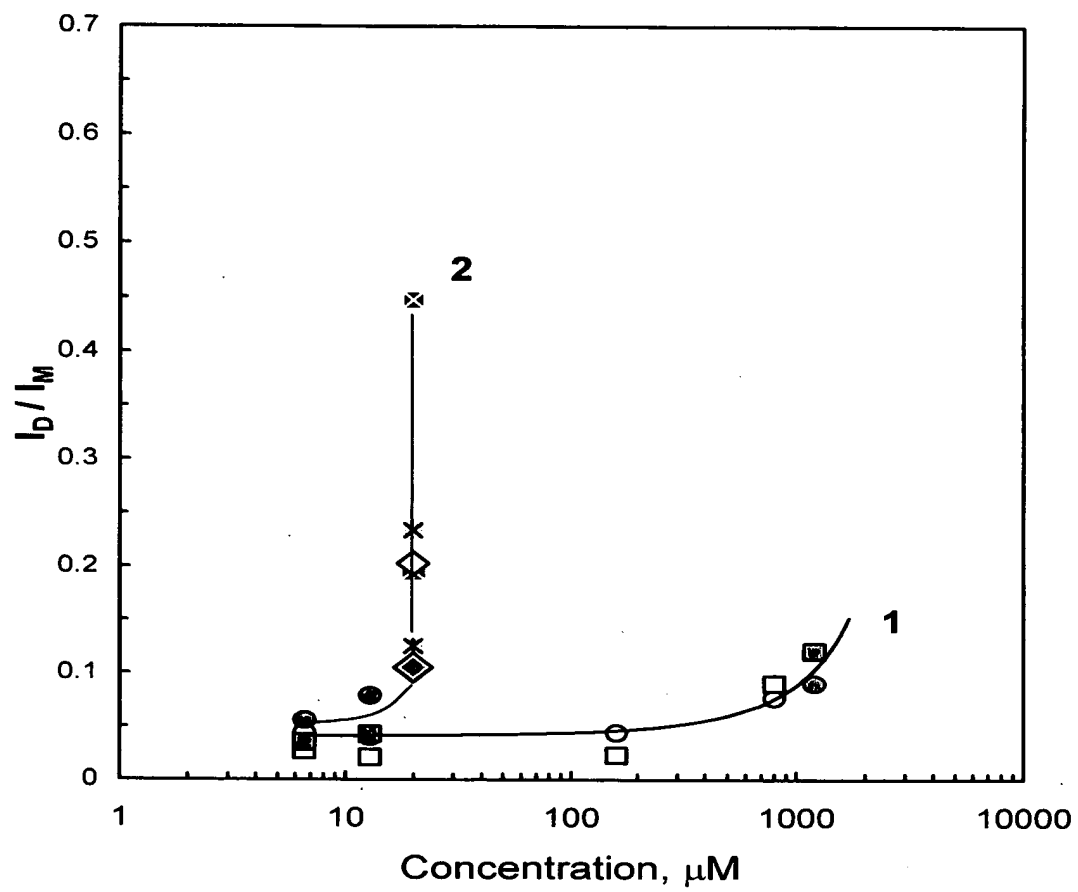


FIGURE 16

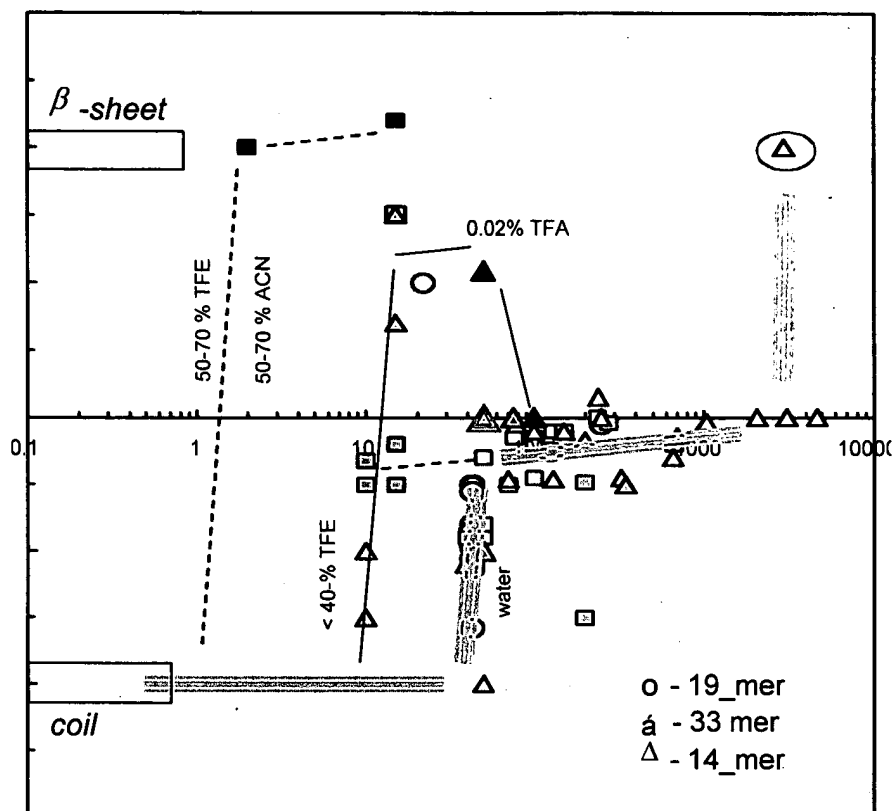
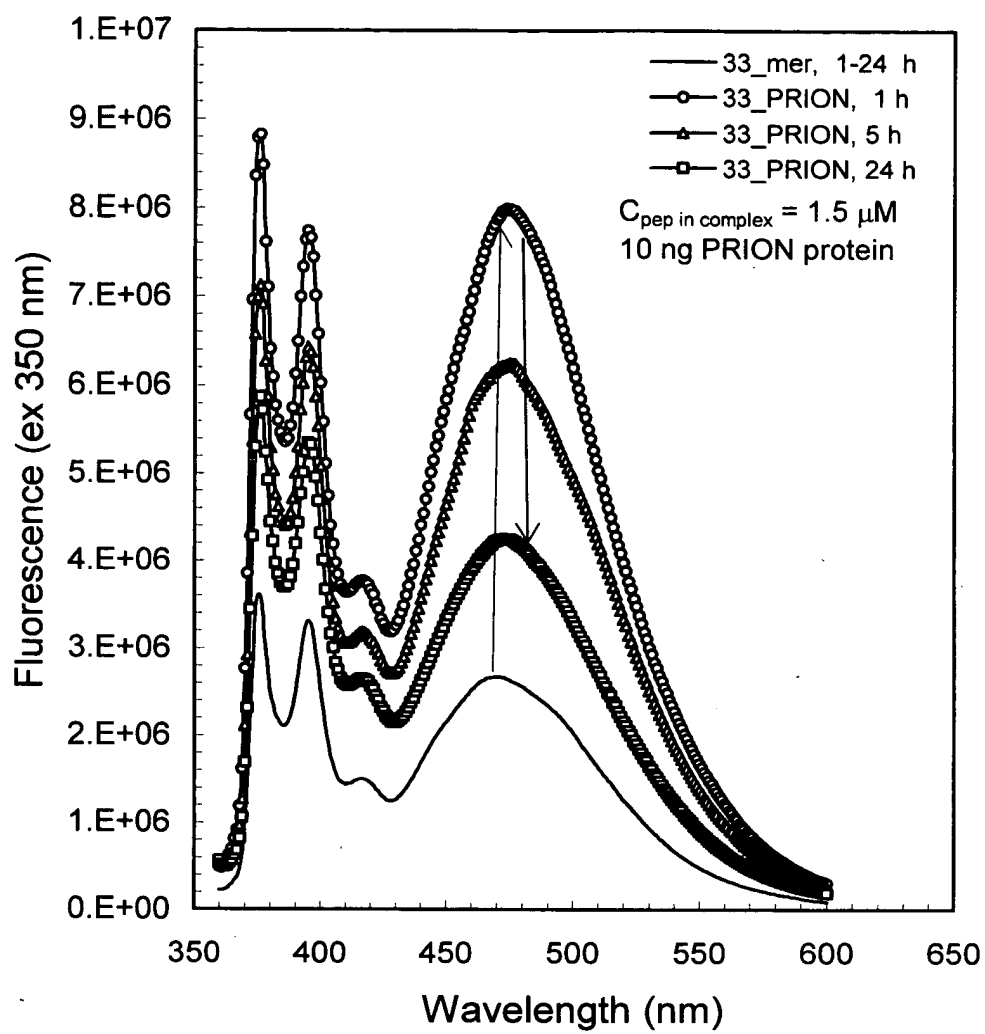
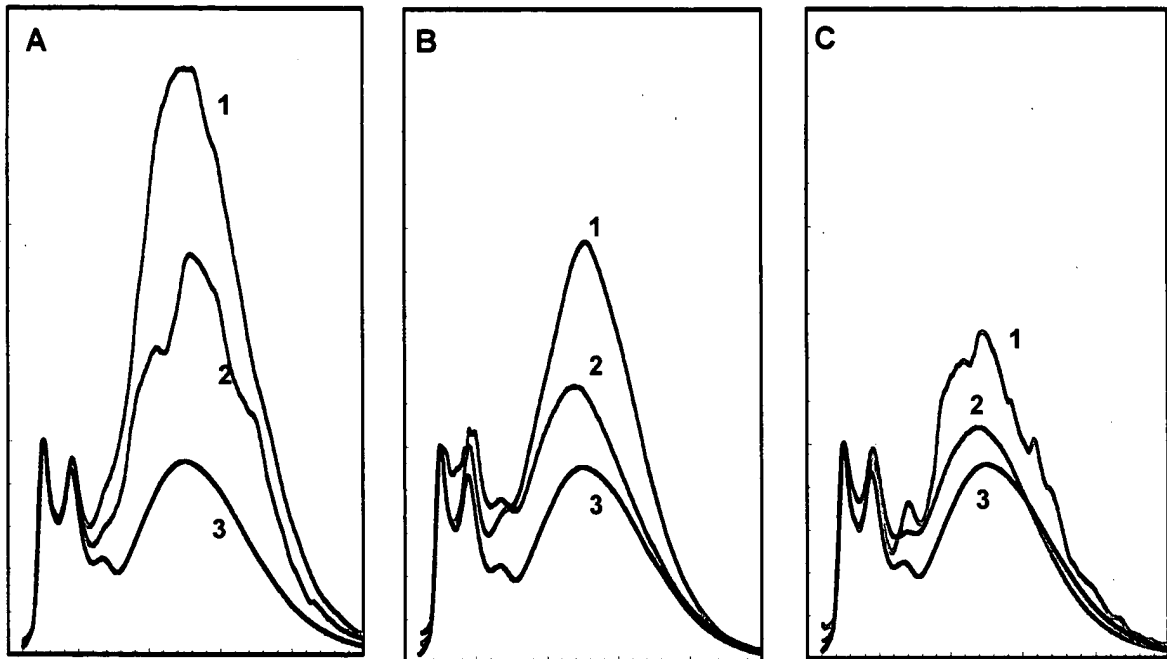


FIGURE 17



**FIGURE 18**



**FIGURE 19**

